

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application. Please cancel claims 40 and 51 without prejudice and amend claims 30, 34, and 45 as follows:

Claims 1-29 (Cancelled).

30. (Currently Amended) A communication system comprising:

a first communication device for electrifying an electrification target having electrification properties by generating a quasi-electrostatic field modulated according to information to be sent; and

a second communication device for detecting change in electrification condition of the electrification target and demodulating the information based on the change,

wherein the electrification target is a human body, and

wherein the modulation means performs the modulation according to information to be sent so that a relation of $r = \lambda/2\pi$ is satisfied where a longest distance between the electric field generation electrode and a detection electrode for detecting the quasi-electrostatic field is taken to r and a wavelength of the modulated signal to be output to the electric field generation electrode is taken to λ .

31. (Cancelled).

32. (Previously Presented) The communication system according to claim 30, wherein each of the first communication device and the second communication device is of a

portable type, and the first communication device and the second communication device are provided in a neighborhood of different human bodies.

33. (Previously Presented) The communication system according to claim 30, wherein the first communication device is of a portable type and provided in a neighborhood of the human body; and

the second communication device is provided on or in a neighborhood of a predetermined control target.

34. (Currently Amended) A communication device comprising:
an electric field generation electrode for generating an electric field; and
modulation means for performing modulation according to information to be sent so that an electrification target is electrified by a quasi-electrostatic field out of the electric field generated from the electric field generation electrode, and outputting a modulated signal resulted from the modulation, to the electric field generation electrode,

wherein the electrification target is a human body, and

wherein the modulation means performs the modulation according to information to be sent so that a relation of $r = \lambda/2\pi$ is satisfied where a longest distance between the electric field generation electrode and a detection electrode for detecting the quasi-electrostatic field is taken to r and a wavelength of the modulated signal to be output to the electric field generation electrode is taken to λ .

35. (Cancelled).

36. (Previously Presented) The communication device according to claim 34, wherein the modulation means performs the modulation according to information to be sent so that the human body is electrified by the quasi-electrostatic field as an antenna.

37. (Previously Presented) The communication device according to claim 34, wherein the communication device is of a portable type and is provided in a neighborhood of the human body.

38. (Previously Presented) The communication device according to claim 34, wherein the modulation means outputs the modulated signal in a condition where at least one of electric power and electric charge is limited.

39. (Previously Presented) The communication device according to claim 34, wherein the modulation means performs the modulation according to information to be sent so that the quasi-electrostatic field generated from the electric field generation electrode is dominant, based on a distance between the electric field generation electrode and a detection electrode for detecting the quasi-electrostatic field and a wavelength of the modulated signal to be output to the electric field generation electrode.

40. (Cancelled).

41. (Previously Presented) The communication device according to claim 34, wherein

the electric field generation electrode forms an electric route to an electric field generation electrode of a communication counterpart via the electrification target electrified by the communication counterpart, and comprises a storage means for storing a signal occurring in the route, as own starting power.

42. (Previously Presented) The communication device according to claim 34, wherein:

the electric field generation electrode is a parallel plane electrode; and
in the parallel plane electrode, an electrode area and a distance between electrodes are determined so that a strength induction field component of an electric field at a prescribed position in a neighborhood of the parallel plane electrode is below a noise floor specified according to a communication band, when electric potential of a reference frequency is supplied.

43. (Previously Presented) The communication device according to claim 34, wherein
the electric field generation electrode is a parallel plane electrode; and
in the parallel plane electrode, an electrode area and a distance between electrodes are determined so that a strength induction field component of an electric field at a prescribed position in a neighborhood of the parallel plane electrode is below a noise floor specified according to a communication band and is larger than a noise generated in the detection means of a communication counterpart for detecting the electric field, when electric potential of a reference frequency is supplied.

44. (Previously Presented) The communication device according to claim 38,
wherein,

in the parallel plane electrode, in a case where an electrode area is taken to A_S [m^2], a distance between electrodes is taken to d_S [m], potential between electrodes is taken to V_S [V], potential between electrodes and a distance between electrodes of a parallel plane electrode in a communication counterpart is taken to V_R [V] and d_R [m], and a constant depending on the distance between electrodes d_R , the electrode area A_S , and the distance between electrodes d_S is taken to α , the electrode area A_S and the distance between electrodes d_S are determined so that a following formula $V_R = \alpha \times V_S \times A_S \times d_S \times d_R$ is satisfied, when the distance between electrodes d_R is fixed and potential between electrodes V_S of a reference frequency is supplied.

45. (Currently Amended) A communication device comprising:
detection means for detecting an electrification condition of an electrification target electrified by a quasi-electrostatic field out of an electric field based on a modulated signal obtained through modulation according to information to be sent; and

demodulation means for modulating the information based on change in the electrification condition detected by the detection means,

wherein the electrification target is a human body, and

wherein the detection means detects an electrification condition of an electrification target electrified by the quasi-electrostatic field based on a modulated signal resulted from modulation according to information to be sent so that a relation of $r = \lambda/2\pi$ is satisfied where a longest distance between the electric field generation electrode and a detection electrode for

detecting the quasi-electrostatic field is taken to r and a wavelength of the modulated signal to be output to the electric field generation electrode is taken to λ .

46. (Cancelled).

47. (Previously Presented) The communication device according to claim 45, wherein the detection means detects an electrification condition of a human body electrified by the quasi-electrostatic field as an antenna.

48. (Previously Presented) The communication device according to claim 45, wherein the communication device is of a portable type and provided in a neighborhood of the human body.

49. (Previously Presented) The communication device according to claim 45, wherein the communication device is provided on or in a neighborhood of a prescribed control target.

50. (Previously Presented) The communication device according to claim 45, wherein the detection means detects an electrification condition of an electrification target electrified by the quasi-electrostatic field based on a modulated signal resulted from modulation according to information to be sent so that the quasi-electrostatic field is dominant based on a distance between the electric field generation electrode and a detection electrode for detecting the quasi-electrostatic field and a wavelength of the modulated signal to be output to the electric field generation electrode.

51. (Cancelled)

52. (Previously Presented) The communication device according to claim 45,
comprising

leakage preventing means for preventing electrical leakage from a route from the
detection means to the demodulation means.

53. (Previously Presented) The communication device according to claim 52, wherein
the leakage preventing means causes an electrostatic capacity from the detection means to the
ground via the demodulation means to be larger than an electrostatic capacity between the
detection means and the ground.

54. (Previously Presented) The communication device according to claim 52,
wherein:

the detection means has a detection electrode for detecting the electrification condition
and conversion means for converting the electrification condition detected by the detection
electrode into an electric signal; and

the leakage preventing means comprises a case for physical separation into the detection
electrode and the conversion means.

55. (Previously Presented) The communication device according to claim 52, wherein
the leakage preventing means grounds only the demodulation means out of the route from the
detection means to the demodulation means.

56. (Previously Presented) The communication device according to claim 45,
wherein:

the electrification target is a moving entity; and

the communication device comprises:

a power supply electrode for generating the quasi-electrostatic field for power
supply to a communication counterpart; and

coupling preventing means for preventing electrical coupling between the
electrification target and the ground, the coupling preventing means being provided on a
passage through which the electrification target passes.

57. (Previously Presented) The communication device according to claim 56, wherein
the coupling preventing means is formed with a floor surface provided at a prescribed distance
from the ground.

58. (Previously Presented) The communication device according to claim 56, wherein
the coupling preventing means is formed with a low-dielectric-constant member covered over the
passage and connected to the ground.

59. (Previously Presented) The communication device according to claim 41,
wherein:

the electrification target is a human body; and

the communication device comprises:

a power supply electrode for generating the quasi-electrostatic field for power supply to a communication counterpart;

a detection electrode for detecting an electrification condition of the human body according to walking of the human body; and

power supply means for supplying a signal for power supply to the power supply electrode only while the detection electrode detects the electrification condition.

60. (Previously Presented) The communication device according to claim 45, wherein:

the electrification target is a human body; and

the communication device comprises:

a power supply electrode for generating the quasi-electrostatic field for power supply to a communication counterpart; and

a detection electrode for detecting an electrification condition caused in the human body according to walking of the human body, wherein

the power supply electrode and the detection electrode comprise the same electrodes.

61. (Previously Presented) The communication device according to claim 45, comprising:

a power supply electrode for generating the quasi-electrostatic field for power supply to a communication counterpart; and

power supply means for supplying a signal for the power supply to the power supply electrode, wherein

the power supply means also uses the signal for the power supply as a carrier signal to be sent to the communicating party.

62. (Previously Presented) The communication device according to claim 45, wherein:

the detection means has a detection electrode comprising a parallel plane electrode for detecting the electrification condition; and

in the parallel plane electrode, a distance between electrodes is determined, independently from an electrode area, so that a strength induction field component of an electric field at a prescribed position in a neighborhood of the parallel plane electrode is below a noise floor specified according to a communication band, when potential of a reference frequency is supplied to a parallel plane electrode of a communication counterpart existing at a prescribed position.

63. (Previously Presented) The communication device according to claim 45, wherein:

the detection means has a detection electrode comprising a parallel plane electrode for detecting the electrification condition; and

in the parallel plane electrode, a distance between electrodes is determined, independently from an electrode area so that a strength induction field of an electric field at a prescribed position in a neighborhood of the parallel plane electrode is below a noise floor

specified according to a communication band and is larger than a noise generated in the detection means, when potential of a reference frequency is supplied to a parallel plane electrode of a communication counterpart existing at a prescribed position.

64. (Previously Presented) The communication device according to claim 45, wherein:

the detection means has a detection electrode comprising a parallel plane electrode for detecting the electrification condition; and

in the parallel plane electrode, in a case where potential between electrodes V_R [V], a distance between electrodes d_R [m], an electrode area of a parallel plane electrode of a communication counterpart is taken to A_S [m²], a distance between electrodes is taken to d_S [m], potential between electrodes is taken to V_S [V], and a constant depending on the distance between electrodes d_R , the electrode area A_S , and the distance between electrodes d_S is taken to α , the distance between electrodes d_R is determined so that a following equation $V_R = \alpha \times V_S \times A_S \times d_S \times d_R$ is satisfied, when the distance between electrodes d_R is fixed and potential between electrodes V_S of a reference frequency is supplied.

65. (Previously Presented) An electrode manufacturing method of an electrode to be used in communicating a quasi-electrostatic field as an information communication medium, wherein

a first step of selecting an originating frequency and a communication band for communication, a distance between electrodes and an electrode area of a sender parallel plane

electrode to be used as a sender electrode, and a distance between electrodes of a receiver parallel plane electrode to be used as a receiver electrode;

a second step of determining a communication limit position between the sender parallel plane electrode and the receiver parallel plane electrode based on a matter selected in the first step; and

a third step of determining whether potential exists where a strength induction field component of an electric field at the communication limit position determined in the second step is below a noise floor specified according to the communication band, when potential of the originating frequency is supplied to the sender parallel plane electrode.

66. (Previously Presented) The electrode manufacturing method according to claim 65, wherein:

in the first step, a preamplifier to be connected to the receiver parallel plane electrode is selected in addition to the originating frequency and the communication band, the distance between electrodes and the electrode area of the sender parallel plane electrode, and the distance between electrodes of the receiver parallel plane electrode; and

the electrode manufacturing method further comprises a fourth step of determining whether potential between electrodes caused in the receiver parallel plane electrode is larger than a voltage noise of the preamplifier when such determination result is obtained in the third step that the potential below the noise floor exists.